



Docket No.: 245498US41X DIV



COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

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RE: Application Serial No.: 10/717,465

Applicants: Alexandre CORJON, et al.

Filing Date: November 21, 2003

For: METHOD FOR ACCELERATING DESTRUCTION  
OF A VORTEX FORMED BY A WING OF AN  
AIRCRAFT

Group Art Unit: 3644

Examiner: LUU, T.

SIR:

Attached hereto for filing are the following papers:

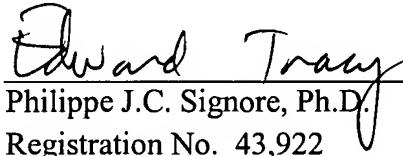
**REPLY BRIEF**

**REQUEST FOR ORAL HEARING (duplicate)**

Our credit card payment form in the amount of \$1,000.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF

ALEXANDRE CORJON, ET AL. : EXAMINER: LUU, T.

SERIAL NO: 10/717,465 :

FILED: NOVEMBER 21, 2003 : GROUP ART UNIT: 3644

FOR: METHOD FOR ACCELERATING  
DESTRUCTION OF A VORTEX FORMED  
BY A WING OF AN AIRCRAFT

REPLY BRIEF

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

This is a reply to the Examiner's Answer dated July 17, 2007. This Reply Brief addresses the assertions made in the Examiner's Answer with respect to the original grounds of rejection.

I. REAL PARTY-IN-INTEREST

The real part-in-interest is Airbus France S.A.S.

II. RELATED APPEALS AND INTERFERENCES

The status of related appeals and interferences is the same as provided in the Appeal Brief.

III. STATUS OF CLAIMS

Claims 1, 2, 6-13, 17-19, 23-28, 30, and 31 have been finally rejected and form the basis for this appeal. Claims 3-5, 14-16, 20-22, and 29 are withdrawn. Appendix VIII of the Appeal Brief includes a clean copy of appealed Claims 1, 2, 6-13, 17-19, 23-28, 30, and 31.

IV. STATUS OF AMENDMENTS

No amendments after final rejection have been filed.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 1 is directed to a method for accelerating a destruction of a vortex formed at a rear of a wing of an aircraft by a merging of first and second co-rotating eddies. The method includes generating a periodic perturbation adjacent an area of creation of the first eddy. The periodic perturbation has a predetermined wavelength that excites at least one internal instability mode of a core of the first eddy. This method is described in the specification from page 7, line 24 to page 10, line 16, as illustrated by Figure 1. First co-rotating eddy 7A merges with second co-rotating eddy 8A to form vortex 5A at a rear portion of wing 3A. Perturbation device 11 generates a periodic perturbation adjacent an area of creation 10A of the first eddy 7A. The periodic perturbation has a predetermined wavelength that excites at least one internal instability mode of a core of the first eddy 7A.

Independent Claim 7 is directed to a method for accelerating a destruction of a vortex formed at a rear of a wing of an aircraft by a merging of first and second co-rotating eddies. The method includes emitting a jet of fluid transverse to a direction of travel of the aircraft. The jet of fluid causes a periodic perturbation having a predetermined wavelength that excites at least one instability mode of the first eddy. This method is described in the specification from page 7, line 24 to page 10, line 16 and page 14, lines 11-21, as illustrated by Figures 1

and 3. First co-rotating eddy 7A merges with second co-rotating eddy 8A to form vortex 5A at a rear portion of wing 3A. Perturbation device 12 emits a jet of fluid 15 transverse to a direction of travel of the aircraft. The jet of fluid 15 causes a periodic perturbation having a predetermined wavelength that excites at least one instability mode of the first eddy 7A.

Independent Claim 10 is directed to a method for accelerating a destruction of first and second contra-rotating vortices formed at a rear of first and second wings of an aircraft. The first contra-rotating vortex is formed by a merging of first and second co-rotating eddies. The second contra-rotating vortex is formed by a merging of third and fourth co-rotating eddies. The method includes generating a first periodic perturbation adjacent an area of creation of the first eddy, and generating a second periodic perturbation adjacent an area of creation of the third eddy. The first periodic perturbation has a first predetermined wavelength that excites at least one internal instability mode of a core of the first eddy. The second periodic perturbation has a second predetermined wavelength that excites at least one internal instability mode of a core of the third eddy. This method is described in the specification from page 7, line 24 to page 10, line 16, as illustrated by Figure 1. First co-rotating eddy 7A merges with second co-rotating eddy 8A to form first vortex 5A at a rear portion of first wing 3A. Third co-rotating eddy 7B merges with fourth co-rotating eddy 8B to form second vortex 5B at a rear portion of second wing 3B. First perturbation device 11 generates a first periodic perturbation adjacent an area of creation 10A of the first eddy 7A. The first periodic perturbation has a predetermined wavelength that excites at least one internal instability mode of a core of the first eddy 7A. Second perturbation device 11 generates a second periodic perturbation adjacent an area of creation 10B of the third eddy 7B. The second periodic perturbation has a predetermined wavelength that excites at least one internal instability mode of a core of the third eddy 7B.

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection to be reviewed on appeal are:

(a) whether Claims 1, 2, 8-13, 14-20, 23-30, 33, and 36 are anticipated under 35 U.S.C. §102(b) by Yuan (U.S. Patent No. 3,936,013), or in the alternative, are unpatentable under 35 U.S.C. §103(a) over Yuan in view of ordinary skill in the art; and

(b) whether Claims 1, 2, 6-13, 17-19, 23-28, 30, and 31 are unpatentable under 35 U.S.C. §103(a) over Yuan in view of Bilanin et al. (U.S. Patent No. 6,042,059, hereinafter “Bilanin”).

**VII. ARGUMENTS**

Initially, it is respectfully submitted that the pending claims distinguish over Yuan in view of Bilanin, and it is respectfully requested that this rejection be considered under appeal as well.

The Examiner’s Answer asserts that patentable weight has been given to the features of Claim 1, but then concludes that such features are simply a desired outcome. The Examiner’s Answer further concludes that “excites” “is limiting only in the sense that the prior art method steps must be capable of exciting the at least one instability mode to read on the limitation. It is the examiner’s position that Yuan teaches this capability.”

However, Applicant asserts that neither Yuan nor Bilanin explicitly teach or suggest generating a perturbation having any *particular* wavelength, much less a wavelength configured to excite at least one instability mode of the first co-rotating eddy to accelerate a destruction of a vortex. In fact, no portion of Yuan or Bilanin has been cited as teaching the generation of a perturbation having any particular wavelength. At best, the Examiner’s Answer asserts at page 9, lines 3-4 that the ejection of Yuan will necessarily have a wavelength, the wavelength apparently undisclosed and unknown. In fact, the outstanding

Office Action conceded at page 13, lines 3 and 4 that neither Yuan nor Bilanin disclose the diameters of first and second vortices. Thus, the outstanding Office Action and the Examiner's Answer are apparently asserting that at least one of Yuan or Bilanin inherently teaches the features of the invention recited in Claim 1.

In this regard, the Examiner's Answer generally asserts that Yuan teaches the creation of a perturbation. At best, the Examiner's Answer is asserting that, under some circumstances, the device described by Yuan *may* create a perturbation having a wavelength configured to excite at least one instability mode of a first co-rotating eddy to accelerate destruction of a vortex. However, the fact that a certain result or characteristic *may* occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). (Emphasis in original). “In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). (Emphasis in original). See MPEP §2112. In the present case, it is respectfully submitted that no evidence or reasoning has been provided to show that Yuan *necessarily* describes generating a periodic perturbation adjacent an area of creation of the first eddy, the periodic perturbation having a predetermined wavelength that excites at least one internal instability mode of a core of the first eddy.

With regard to the statement that “The examiner asserts the disclosed apparatus and the manner in which they are used are very similar,” it is respectfully submitted that “very similar” is not the basis upon which rejections are made under 35 U.S.C. §§102 and 103. Under well-settled case law, the cited references must teach or suggest every element of the claim, in as great a detail as contained in the claim. For example, “*All words in a claim* must

be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). (Emphasis added.) See MPEP §2143.03.

In the present case, it is respectfully submitted that neither Yuan nor Bilanin teach or suggest, either explicitly or inherently, generating a periodic perturbation adjacent an area of creation of the first eddy, *the periodic perturbation having a predetermined wavelength that excites at least one internal instability mode of a core of the first eddy*. It is respectfully submitted that the outstanding rejections are ignoring the detailed features of the present claims, in conflict with the present law under 35 U.S.C. §§102 and 103.

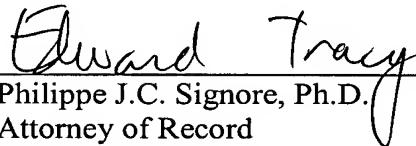
Accordingly, neither Yuan nor Bilanin explicitly or inherently teaches or suggests "generating a periodic perturbation" as defined in Claim 1.

In a similar manner, neither Yuan nor Bilanin explicitly or inherently teaches or suggests "emitting a jet of fluid" as defined in Claim 7 or "generating a first periodic perturbation" and "generating a second periodic perturbation" as defined in Claim 10. Consequently, independent Claims 1, 7, and 10 are believed to define over the cited art for at least the reasons discussed herein and in the Appeal Brief.

It is respectfully requested that the outstanding rejections be REVERSED.

Respectfully submitted,

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